CLAIMS

1. A device for controlling propulsive gas mixing at an outlet of an aircraft jet engine, wherein propulsive jets are composed of a hot primary jet exiting from a nozzle of the jet engine and a secondary flux flowing between an external wall of the nozzle and an internal wall of the jet engine comprising:

a divergent trailing edge on the wall that generates conditions of a separation of the primary jet close to an existence limit value and a primary jet controller that enables control of passage of the primary jet from a separated state to a reattached state, and vice versa.

2. The device according to claim 1, wherein controlling the separation of the primary jet is periodic.

3. The device according to claim 2, wherein control of the separation of the primary jet has a frequency between about 50 Hz and about 10 KHz.

4. The device according to claim 1, wherein the controller comprises at least one synthetic jet generated by an intermediary of a slot located in the wall of the nozzle and a piezoelectric actuator housed in a cavity located in the wall of the nozzle.

5. The device according to claim 1, wherein the controller comprises at least one synthetic jet generated by an intermediary of a slot located in the wall of the nozzle and a pressure generator housed in a cavity located in the wall of the nozzle.

6. The device according to claim 1, wherein the controller comprises at least one piezoelectric actuator arranged on the wall of the nozzle.

7. The device according to claim 1, wherein the controller comprises at least two electrodes arranged on the wall of the nozzle to create a corona effect electric discharge.

8. The device according to claim 1, wherein the controller comprises at least one pressure generator arranged on the wall of the nozzle.

9. The device according to claim 1, wherein the controller is arranged on all or a part of the circumference of the internal wall of the nozzle.

10. The device according to claim 1, wherein the controller is arranged on all or a part of the circumference of the external wall of the nozzle.

11. The device according to claim 1, wherein control of the separation of the primary jet is implemented at the trailing edge.

12. The device according to claim 1, wherein control of the separation of the primary jet is implemented to generate either a symmetrical flow or an antisymmetrical flow at the outlet of the jet engine.

13. The device according to claim 1, wherein the trailing edge has an angle with the wall of the nozzle between about 10 and about 30°.

14. The device according to claim 1, wherein the wall of the nozzle is convergent upstream of the trailing edge.